

Gray County

Estimated Economic Impact of Agriculture, Food, and Food Processing Sectors

10/3/14

12 agriculture, food, and food processing sectors were analyzed to determine their overall contribution to the Gray County economy.¹

These 12 sectors have a total direct output of approximately \$571 million and support 1,061.7 jobs in Gray County. Running the model for all 12 sectors simultaneously produces the following results:

Agriculture Contribution in Gray Co						
Impact Type ²	Employment	% Employment	Total Value Added ³	% of Gross Regional Product ⁴	Output ⁵	% of Gross Regional Product
Direct Effect	1,061.7	21%	112,691,414.9	32%	571,271,643.8	165%
Indirect Effect	405.7	8%	39,536,714.3	11%	65,740,701.5	19%
Induced Effect	257.6	5%	18,641,395.4	5%	29,002,372.2	8%
Total Effect	1,725.0	35%	170,869,524.6	49%	666,014,717.5	192%

As shown in the above table, agriculture, food, and food processing supports 1,725.0 jobs, or 35% of the entire workforce in the county. These industries provide a total economic contribution of approximately \$666 million, roughly 192% of Gross Region Product (GRP). As noted below in the calculation of Gross Regional Product, imports and institutional sales are subtracted. Therefore, counties that import a relatively large amount of goods and services will have a reduced GRP which may lead to agricultural output being greater than GRP.

Another metric used to calculate the importance of sectors in an economy is their value added as a percentage of GRP. Total value added by the 12 agriculture, food, and food processing sectors is approximately \$171 million, or 49% of the GRP. This indicates that personal income, business income, and taxes generated by these sectors account for 49% of the total economy.

¹ Article on building a contribution analysis in IMPLAN that avoids double counting:

http://www.implan.com/index.php?option=com_content&view=article&id=660%3A660&catid=253%3AKB33&Itemid=70

² Direct, indirect, and induced effects sum together to estimate the total economic contribution in the state. **Direct effects** capture the contribution from agricultural and food products. **Indirect effects** capture the economic benefit from farms and agricultural businesses purchasing inputs from supporting industries within the state. **Induced effects** capture the benefits created when employees of farms, agricultural businesses, and the supporting industries spend their wages on goods and services within the state.

³ Value added = labor income + indirect business taxes + other property type income.

⁴ GRP = final demand of households + governments expenditures + capital + exports - imports - institutional sales.

⁵ Output = intermediate inputs + value added.

The following tables document the overall summary numbers of the model, top industries affected by employment and output, and a listing of all industries that were analyzed.

In the top ten by employment, Cattle ranching and farming is the top employer in the agriculture industry with 452.4 employees. This table also shows the amount of jobs that are created by the agriculture industry in Gray County.

Description	Total Employment	Total Output
Cattle ranching and farming	452.4	375,039,166.2
Grain farming	419.7	129,144,355.5
Wholesale trade businesses	87.6	16,833,675.5
Real estate establishments	86.8	11,630,522.4
Support activities for agriculture and forestry	72.3	219,597.0
Monetary authorities and depository credit intermediation activities	47.5	16,000,510.3
Bread and bakery product manufacturing	42.4	7,768,424.7
Transport by truck	40.0	5,310,802.2
Farm machinery and equipment manufacturing	38.9	21,370,904.1
Securities, commodity contracts, investments, and related activities	38.3	4,669,426.1

The Cattle ranching and farming industry directly contributes approximately \$375 million to Gray County's economy. This table also shows how much revenue is generated in other industries by having a strong agriculture industry.

Description	Total Employment	Total Output
Cattle ranching and farming	452.4	375,039,166.2
Grain farming	419.7	129,144,355.5
Farm machinery and equipment manufacturing	38.9	21,370,904.1
All other crop farming	9.3	18,018,819.7
Wholesale trade businesses	87.6	16,833,675.5
Monetary authorities and depository credit intermediation activities	47.5	16,000,510.3
Real estate establishments	86.8	11,630,522.4
Imputed rental activity for owner-occupied dwellings	0.0	8,109,512.5
Bread and bakery product manufacturing	42.4	7,768,424.7
Fertilizer manufacturing	4.3	6,634,889.2

Below is a summary of all agriculture data with employment levels and output level. These values can tell how many jobs are represented by each agriculture sector and the output they contributed to Gray County's economy.

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All 105 counties in Kansas have Implan models and agriculture contribution summary. These values do not factor in the retail environment of food sales. Food retail is important, but in order to provide the most accurate picture of what production agricultural and processing contributes to Kansas, the retail sector was omitted.